

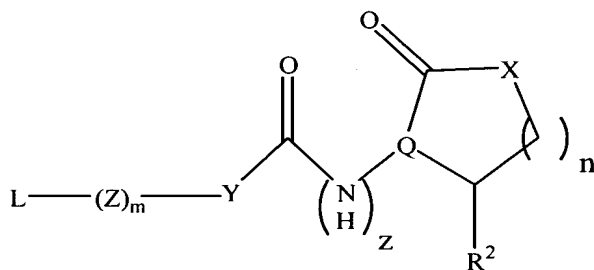
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-15 (canceled)

16. (original) A method for detecting a Gram negative bacteria autoinducer in a sample comprising adding to the sample an antibody in which the antibody specifically binds the autoinducer of a Gram negative bacteria of a compound of Formula (I):

(I)

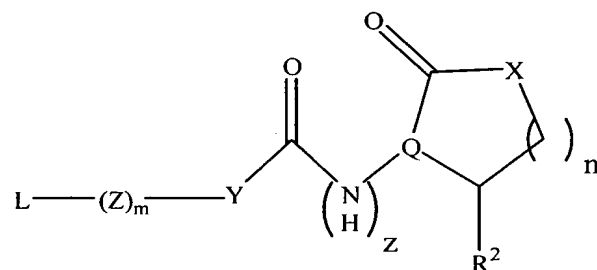


where X is O, S, N-(C<sub>1</sub>—C<sub>6</sub>) alkyl, NR<sup>2</sup>, N-phenyl; Y is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR<sup>1</sup>, C=N-OH, C<sub>1</sub>—C<sub>8</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkynyl; L is C<sub>1</sub>—C<sub>18</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>18</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>18</sub> straight branched alkynyl, or —CO<sub>2</sub>H, —CO<sub>2</sub>R<sup>1</sup>, —CHO, —C≡N, —N=C=O, —N=C=S, OH, OR<sup>1</sup>, —CH=CH—CH<sub>2</sub>Br, —CH=CH—CH<sub>2</sub>Cl, —SAc or SH, where R<sup>1</sup> is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, m is 0 or 1; z is 0 or 1; R<sup>2</sup> is H, C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl or C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl, or CO<sub>2</sub>H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N—(C<sub>1</sub>—C<sub>6</sub> alkyl) or N-phenyl.

17. (currently amended) The method according to claim 16 wherein the autoinducer is produced by a Gram negative bacteria comprising *Aeromonas hydrophila*, *Agrobacterium tumefaciens* ~~*tumefaciens*~~, *Burkholderia cepacia*, *Chromobacterium violaceum*, *Enterobacter agglomerans*, *Erwinia stewarti*, *Erwinia carotovora*, *Escherichia coli*, *Nitrosomas europea*, *Photobacterium fischeri*, *Pseudomonas aeruginosa*, *Pseudomonas aureofaciens*, *Rhizobium leguminosarum*, *Serratia liquefaciens*, or *Vibrio harveyi*.

18. (original) A method of treating or preventing an infectious disease in a subject comprising administering an amount of an immunogenic conjugate in which the immunogenic conjugate comprises a carrier molecule covalently conjugated or otherwise bound to an autoinducer of a Gram negative bacteria of a compound of Formula (I):

(I)



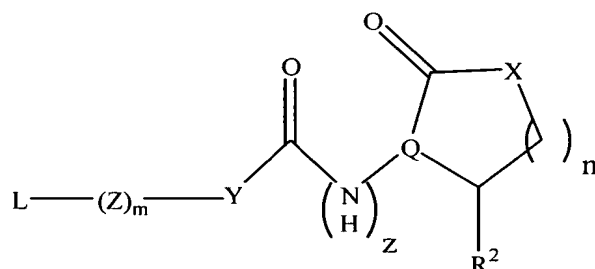
where X is O, S, N-(C<sub>1</sub>—C<sub>6</sub>) alkyl, NR<sup>2</sup>, N-phenyl; Y is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR<sup>1</sup>, C=N-OH, C<sub>1</sub>—C<sub>8</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkynyl; L is C<sub>1</sub>—C<sub>18</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>18</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>18</sub> straight branched alkynyl, or —CO<sub>2</sub>H, —CO<sub>2</sub>R<sup>1</sup>, —CHO, —C≡N, —N=C=O, —N=C=S, OH, OR<sup>1</sup>, —CH=CH—CH<sub>2</sub>Br, —CH=CH—CH<sub>2</sub>Cl, —SAc or SH, where R<sup>1</sup> is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, m is 0 or 1; z is 0 or 1; R<sup>2</sup> is H, C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl or C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl, or CO<sub>2</sub>H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N—(C<sub>1</sub>—C<sub>6</sub> alkyl) or N-phenyl, in which said amount is effective to treat or prevent said infectious disease.

19. (original) The method according to claim 18 wherein said immunogenic conjugate is administered orally, intradermally, intramuscularly, intraperitoneally, intravenously, subcutaneous, or intranasally.

20. (original) The method according to claim 18 wherein said subject is a human.

21. (original) The method of claim 18 in which the infectious disease is caused by a Gram negative bacteria.

22. (original) A method of treating or preventing an infectious disease in a subject comprising administering an amount of an antibody or fragment thereof which specifically binds an autoinducer of a Gram negative bacteria of a compound of Formula (I):  
(I)



where X is O, S, N-(C<sub>1</sub>—C<sub>6</sub>) alkyl, NR<sup>2</sup>, N-phenyl; Y is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR<sup>1</sup>, C=N-OH, C<sub>1</sub>—C<sub>8</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>8</sub> straight or branched alkynyl; L is C<sub>1</sub>—C<sub>18</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>18</sub> straight or branched alkenyl, C<sub>1</sub>—C<sub>18</sub> straight branched alkynyl, or —CO<sub>2</sub>H, —CO<sub>2</sub>R<sup>1</sup>, —CHO, —C≡N, —N=C=O, —N=C=S, OH, OR<sup>1</sup>, —CH=CH—CH<sub>2</sub>Br, —CH=CH—CH<sub>2</sub>Cl, —SAc or SH, where R<sup>1</sup> is C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, m is 0 or 1; z is 0 or 1; R<sup>2</sup> is H, C<sub>1</sub>—C<sub>6</sub> straight or branched alkyl, C<sub>1</sub>—C<sub>6</sub> straight or branched alkenyl or C<sub>1</sub>—C<sub>6</sub> straight or branched alkynyl, or CO<sub>2</sub>H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N—(C<sub>1</sub>—C<sub>6</sub> alkyl) or N-phenyl, in which said amount is effective to treat or prevent said infectious disease.

23. (original) The method according to claim 22 wherein said subject is a human.

24. (original) The method according to claim 22 wherein said antibody is administered orally, intradermally, intramuscularly, intraperitoneally, intravenously, subcutaneously, or intranasally.

25. (original) The method of claim 22 in which the infectious disease is caused by a Gram negative bacteria.

26-34 (canceled)